UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,335	09/30/2003	Zhen Liu	YOR920030408US1	4639

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EXAMINER
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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/674,335	LIU ET AL.
	Examiner	**Art Unit**	
	ALEXANDER BOAKYE	2616	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Double Patenting

1.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. ·1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite encoding the distribution tree to produce an encoded distribution tree; creating a header including the encoded distribution tree; adding the header to a data packet to be distributed to the distribution tree with the only difference between claim 1 of the instant

application and claim 1 of the copending application being that claim 1 of the

instant application recites modifying the header as the data packet is

distributed down the distribution tree to repair the distribution tree while the

copending application does not anticipate such limitation. Therefore, it would

have been obvious to one of ordinary skill in the art to implement the invention

of the instant application using the claim of the copending application for

efficient delivery of packet to end users.

Claim 3 is provisionally rejected on the ground of nonstatutory obviousness-type

double patenting as being unpatentable over claim 2 of copending Application No.

10/674,334. Although the conflicting claims are not identical, they are not patentably

distinct from each other because both applications recite modifying the header as

said the packet is distributed down the distribution tree to remove encoded

information concerning upper distribution levels of the distribution tree.

Claim 4 is provisionally rejected on the ground of nonstatutory obviousness-type

double patenting as being unpatentable over claim 3 of copending Application No.

10/674,334. Although the conflicting claims are not identical, they are not patentably

distinct from each other because both applications recite decoding a portion of the

encoded distribution tree as a node receives the data packet and re-encoding

the encoded distribution tree as the node passes the data packet to another

node down the distribution tree.

Claim 5 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite that the distribution tree controls the order in which the nodes receive the data packets.

Claim 6 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite controlling the order in which said nodes receive the data packets, the encoded distribution tree permits the nodes to process the data packets upon receipt.

Claims 7, 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6,19 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite prior to the encoding process, creating the distribution tree at a sender node based upon a dynamic group of receiver nodes.

Claims 8, 24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7, 20 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite that

the encoding comprises sequentially entering addresses of nodes during a

per-level traversal of the distribution tree starting from the root of the

distribution tree.

Claim 9 is provisionally rejected on the ground of nonstatutory obviousness-type

double patenting as being unpatentable over claim 8 of copending Application No.

10/674,334. Although the conflicting claims are not identical, they are not patentably

distinct from each other because both applications recite encoding the distribution

tree to produce an encoded distribution tree; creating a header including the

encoded distribution tree; adding the header to a data packet to be distributed

to the distribution tree with the only difference between claim 9 of the instant

application and claim 8 of the copending application being that claim 9 of the

instant application recites modifying the header as the data packet is

distributed down the distribution tree to repair the distribution tree while the

copending application recites processing the encoded distribution tree.

Therefore, it would have been obvious to one of ordinary skill in the art to

implement the invention of the instant application using the claim of the

copending application for the benefit of delivery of data packets to right

destination.

Claims 11,19 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claim 9 of copending

Application No. 10/674,334. Although the conflicting claims are not identical, they are

not patentably distinct from each other because both applications recite modifying the

header as said the packet is distributed down the distribution tree to remove

encoded information concerning upper distribution levels of the distribution

tree.

Claims 12, 20 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claim 10 of copending

Application No. 10/674,334. Although the conflicting claims are not identical, they are

not patentably distinct from each other because both applications recite decoding a

portion of the encoded distribution tree as a node receives the data packet

and re-encoding the encoded distribution tree as the node passes the data

packet to another node down the distribution tree.

Claims 13, 21 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claim 11 of copending

Application No. 10/674,334. Although the conflicting claims are not identical, they are

not patentably distinct from each other because both applications recite that the

distribution tree controls the order in which the nodes receive the data

packets.

Claim 14 is provisionally rejected on the ground of nonstatutory obviousness-type

double patenting as being unpatentable over claim 12 of copending Application No.

10/674,334. Although the conflicting claims are not identical, they are not patentably

distinct from each other because both applications recite controlling the order in which said nodes receive the data packets, the encoded distribution tree permits the nodes to process the data packets upon receipt.

Claim 15 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite prior to the encoding process, creating the distribution tree at a sender node based upon a dynamic group of receiver nodes.

Claim 16 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 14 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite that the encoding comprises sequentially entering addresses of nodes during a per-level traversal of the distribution tree starting from the root of the distribution tree.

Claim 17 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 15 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite encoding the distribution tree to produce an encoded distribution tree; creating a header including the encoded distribution tree; adding the header to a data packet to be distributed

to the distribution tree with the only difference between claim 17 of the instant application and claim15 of the copending application being that claim 17 of the instant application recites detected failed nodes and modifying the header while the copending application discloses decoding a portion of the encoded distribution tree and re-encoding the distribution tree. Therefore, it would have been obvious to one of ordinary skill in the art to implement the invention of the instant application using the claim of the copending application for benefit of delivery of data packets to right destination.

Claim 22 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 18 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite controlling the order in which said nodes receive the data packets, the encoded distribution tree permits the nodes to process the data packets upon receipt.

Claim 25 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite encoding the distribution tree to produce an encoded distribution tree; creating a header including the encoded distribution tree; adding the header to a data packet to be distributed to the distribution tree with the only difference between claim 25 of the instant

application and claim 21 of the copending application being that claim 25 of the instant application recites detected failed nodes and modifying the header while the copending application discloses decoding a portion of the encoded distribution tree and re-encoding the distribution tree. Therefore, it would have been obvious to one of ordinary skill in the art to implement the invention of the instant application using the claim of the copending application for the benefit of delivery data packet to right destination.

Claim 27 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 22 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite modifying the header as said the packet is distributed down the distribution tree to remove encoded information concerning upper distribution levels of the distribution tree.

Claim 28 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite decoding a portion of the encoded distribution tree as a node receives the data packet and re-encoding the encoded distribution tree as the node passes the data packet to another node down the distribution tree.

Claim 29 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 24 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite that the distribution tree controls the order in which the nodes receive the data packets.

Claim 30 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 25 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite controlling the order in which said nodes receive the data packets, the encoded distribution tree permits the nodes to process the data packets upon receipt.

Claim 31 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 26 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite prior to the encoding process, creating the distribution tree at a sender node based upon a dynamic group of receiver nodes.

Claim 32 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 27 of copending Application No. 10/674,334. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite that the encoding

comprises sequentially entering addresses of nodes during a per-level

traversal of the distribution tree starting from the root of the distribution tree.

This is a <u>provisional</u> obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

2.   The Applicant is required to provide serial number to pending U.S. Patent

application at page 1 of the specification.

Claim Objections

3.   Claim 25-32 are objected to because of the following informalities.

In claim 25, (lines 1-2), the examiner suggests that "A computer storage device

readable by machine, tangibly embodying a program of instructions executable by the

machine" should be changed to computer readable medium embodied with a computer

program. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Crawley et al. (US Patent # 5,995,503) in view of Lee Jr. et al. (US Patent # 6,798,739).

Regarding claims 1 and 2, Crawley teaches a method of stateless group

communication and data packets to nodes in a distribution tree (Figs. 11 and 12), the

method comprising: encoding the distribution tree to produce an encoded distribution

tree (column 10, lines 49-60 and column 11, lines 1-8); creating a header including the

encoded distribution tree (column 10, lines 56-59); adding the header to a data packet

to be distributed to the distribution tree (column 10, lines 38-45); and modifying the

header as the data packet is distributed down the distribution tree (column 12, lines 1-

10 and column 12, lines 48-51). Crawley differs from the claimed invention in that

Crawley does not disclose repair of distribution tree. However, Lee discloses repair of

distribution tree (column 5, lines 12-16). Therefore, it would have been obvious to one

of ordinary skill in the art at the time the invention was made to modify the teachings of

Crawley to include the feature of repair of distribution tree such as the one taught by

Lee with motivation being that it provides capability for the system to reduce latency.

Regarding claim 3, Crawley further teaches modifying the header as the data

packet is distributed down the distribution tree to remove encoded information

concerning upper distribution levels of the distribution tree (column 10, lines 30-37 and

column 11, line 62-column 12, lines 1-5).

Regarding claim 5, Crawley further teaches that the distribution tree controls the

order in which the nodes receive the data packets (column 10, line 61-column 11,lines

1-8).

Regarding claim 6, Crawley teaches that by controlling the order in which the

nodes receive the packets, the encoded distribution tree permits the nodes to process

the data packets upon receipt (column 10, line 61-column 11,lines 1-8).

Regarding claim 7, Crawley teaches that prior to the encoding process, creating

the distribution tree at a sender node based upon a dynamic group of receiver nodes

(column 10, lines 56-59).

Regarding claim 8, Crawley teaches the encoding comprises sequentially

entering addresses of nodes during a per-level traversal of the distribution tree starting

from the root of the distribution tree (column 11, lines 1-8).

5.   Claims 9-11, 13-19, 21-27, 29-32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Crawley et al. (US Patent # 5,995,503) in view of Auerbach et al.

(US Patent # 5,355,371).

Regarding claims 9, 10, Crawley teaches a method of stateless group

communication of data packets to nodes in a distribution tree, the method comprising:

encoding the distribution tree to produce an encoded distribution tree (column 10, lines

49-60); creating a header including the encoded distribution tree (column 10, lines 56-

59); adding the header to the data packet to be distributed to the distribution tree

(column 10, lines 38-45); modifying the header as the data packet is distributed down

the distribution tree (column 12, lines 1-10 and column 12, lines 12-16). Crawley differs

from the claimed invention in that Crawley does not disclose detecting failed nodes and

remove the failed node. However, Auerbach discloses detecting failed nodes and

remove failed node (column 10, lines 18-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Crawley to include the feature of detecting failed nodes and remove the failed node such as the one taught by Auerbach with motivation being that it provides an improved configuration, thus reducing delays in packet delivery.

Regarding claim 11, Crawley further teaches modifying comprises modifying the header as the data packet is distributed down said distribution tree to remove encoded information concerning upper distribution levels of the distribution tree (column 10, lines 30-37 and column 11,line 62-column 12, lines 1-5).

Regarding claim13, Crawley further teaches that the distribution tree controls the order in which the nodes receive said data packets (column 10, lines 30-37 and column 11,line 62-column 12,lines 1-5).

Regarding claim 14, Crawley further teaches that by controlling the order in which the nodes receive the data packets, the encoded distribution tree permits the nodes to process the data packets upon receipt (column 10, line 61-column 11,lines 1-8).

Regarding claim 15, Crawley further teaches that, prior to the encoding process, creating the distribution tree at a sender node based upon a dynamic group of receiver nodes (column 10, lines 56-59).

Regarding claims 16, 22, Crawley further teaches that the encoding comprises sequentially entering addresses of nodes during a per-level traversal of the distribution tree starting from the root of the distribution tree (column 11, lines 1-8).

Regarding claims 17, 18, Crawley further teaches a method of stateless group communication of data packets to nodes in a distribution tree, the method comprising: encoding the distribution tree to produce an encoded distribution tree (column 10, lines 49-60 and column 11, lines 1-8); creating a header including the encoded distribution tree (column 10, lines 56-59); adding the header to a data packet to be distributed to the distribution tree (column 10, lines 38-45); modifying said header as said data packet is distributed down the distribution tree (column 12,lines 1-10 and column 12, lines 12-16). Crawley differs from the claimed invention in that Crawley does not teach detecting failed nodes down said distribution tree. However, Auerbach from the same field of endeavor discloses detecting failed nodes down the distribution tree (column 10, lines 18-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Crawley to include the feature of detecting failed nodes down the distribution tree such a s the one taught by Auerbach

with motivation being that it provides an improved configuration, thus reducing delays in packet delivery.

Claim 19 is met as previously discussed with respect to claim 11.

Claim 21 is met as previously discussed with respect to claim 13.

Claim 22 is met as previously discussed with respect to claim 14.

Claim 23 is met as previously discussed with respect to claim 15.

Claim 24 is met as previously discussed with respect to claim 16.

Regarding claims 25, 26, Crawley teaches a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform a method of extracting circuit characteristics from a circuit design, the method comprises establishing transmission headers for stateless group communication of data packets to nodes in a distribution tree, the method comprising: encoding the distribution tree to produce an encoded distribution tree (column 10, lines 49-60 and column 11, lines 1-8); creating a header including the encoded distribution tree (column 10, lines 56-59); adding the header to a data packet to be distributed to said distribution tree (column 10,lines 38-45); modifying the header as the data packet is distributed down said distribution (column 12, lines 1-10 and column 12, lines 12-16). Crawley differs from the claimed invention in that Crawley does not teach detecting failed nodes down said

distribution tree. However, Auerbach from the same field of endeavor

discloses detecting failed nodes down the distribution tree (column 10, lines

18-33). Therefore, it would have been obvious to one of ordinary skill in the

art at the time the invention was made to modify the teachings of Crawley to

include the feature of detecting failed nodes down the distribution tree such a

s the one taught by Auerbach with motivation being that it provides an improved

configuration, thus reducing delays in packet delivery.

Regarding claim 27, Crawley further teaches that the modifying

comprises modifying the header as the data packet is distributed down the

distribution tree to remove encoded information concerning upper distribution

levels of the distribution tree (column 10, lines 30-37 and column 11, line 62-

column 12, lines 1-5).

Regarding claim 29, Crawley further teaches that the distribution tree

controls the order in which said nodes receive said data packets (column 10,

line 61-column 11, lines 1-8).

Regarding claim 30, Crawley further teaches that by controlling the order in

which the nodes receive the data packets, the encoded distribution tree

permits the nodes to process the data packets upon receipt (column 10, line

61-column 11,lines 1-8).

Regarding claim 31, Crawley further teaches, prior to the encoding

process, creating the distribution tree at a sender node based upon a dynamic

group of receiver nodes (column 10, lines 56-59).

Regarding claim 32, Crawley further teaches that the encoding comprises

sequentially entering addresses of nodes during a per-level traversal of the

distribution tree starting from the root of the distribution tree (column 11, lines

1-8).

Allowable Subject Matter

6.   Claims 4, 12, 20, 28 would be allowable if rewritten to overcome the double

patenting rejection and objection, set forth in this Office action .

Conclusion

7.   The prior art of made of record and not relied upon is considered pertinent to

Applicant's disclosure.

O'Toole et al. (US Patent # 7,185,077) discloses mechanism for splicing trees.

Li (US Patent # 6,751,747) discloses system, device, and method for detecting

and recovering from failures in a multicast communication system.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Alexander Boakye whose telephone number is (571)

272-3183. The examiner can normally be reached on M-F from 8:30am to 6:00pm. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi Pham, can be reached on (571) 272-3179. The Fax number is (571)

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or PUBLIC PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Any

inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the **Electronic Business Center (EBC)** numbers at 866-217-

9197 and 703-305-3028.

Alexander Boakye

Patent Examiner,
5/13/07